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The Ramifications of Utilizing Test Pilot Graduates as Individual Augmentees

Battaglia, Nicole; Baron, Jonathon; Conlon, Christopher; McNeil, Don

Monterey, California. Naval Postgraduate School

NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

EMBA PROJECT REPORT

THE RAMIFICATIONS OF UTILIZING TEST PILOT GRADUATES AS INDIVIDUAL AUGMENTEES

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By:
LCDR Nicole Battaglia
LT Jonathan Baron
LT Christopher Conlon
LT Don McNeil
Senior Consultant: Dr. Alice Crawford

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EXECUTIVE SUMMARY

This study was chartered with the purpose of evaluating the short- and long-term effects of using Test Pilots to fill Individual Augmentation (IA) billets in the support of the Global War on Terrorism (GWOT). These aviation billets are essential to the test and acquisition workforce to ensure that viable new weapon systems are introduced to the Fleet in a timely manner, especially since test project workloads in Naval Aviation continue to rise. Our study primarily examined helicopter programs currently delayed or at risk of going over budget due to reduced manning, as well as an analysis of the return on investment for Test Pilots when they are assigned an IA. The following key observations were made during our research:

1) Each test squadron has determined their minimum, or red-line, level of manning by analyzing current and future workload requirements.

2) Test Pilots are expensive to train and the rate of return on investment is greatly diminished if their payback tour is interrupted by an IA.

3) The Navy can improve its “rip to fill” way of filling IA billets.

As a result, we have provided the following recommendations on how Naval Aviation Systems Command (NAVAIR) can better manage the process in which IA billets are filled:

1) Seek formal exemption of project officer billets from IAs.
2) Increase the manning level for naval test squadrons.
3) Make IAs more predictable.
4) Assign naval test squadrons specific recurring IA billets.
5) Internally (voluntarily) exempt project officers from IAs.

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TABLE OF CONTENTS

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I. INTRODUCTION AND BACKGROUND

A. INTRODUCTION

Project officer Test Pilots in Naval Air Systems Command (NAVAIR) Test Squadrons are among the 10,000 sailors serving in Individual Augmentation (IA) billets in the Global War on Terror (GWOT). While removed from their primary duties as testers, the aviation program acquisition workload continues to operate at a very high level in support of such priority programs as EA-18G, P-8A, E-2D, P-3, MV-22, MH-60, and VH-71.

The Navy has deployed more than 46,000 IAs to joint and coalition commands since the beginning of Operation Enduring Freedom. It expects to increase its contribution to about 12,000 sailors on the ground in the Middle East. Between 40,000 and 50,000 sailors will join these commands in phases over the next two years to ensure current operations are not disrupted.[1]

B. BACKGROUND

NAVAIR Test squadrons are unique in that their Officer Corps is predominately comprised of Test Pilot School graduates, fulfilling billets that have a direct impact to the implementation of new or improved air warfare systems. Test Pilots must complete flight training, the United States Naval Test Pilot School (USNTPS), and certain Postgraduate Degree programs in order to be qualified. Upon graduation from USNTPS, they are assigned to a developmental

[1] Commander Naval Installations Command. (2007). *Independant Augentation Handbook.* US Navy.

test squadron as a project officer for two years. This is considered their payback tour for training received at USNTPS.

NAVAIR test squadrons are organized in the same way as operational Fleet squadrons, with the number of billets based on mission (project) needs. This Basic Allowance (BA) determines the squadron's manning level, which is normally filled as a percentage of the BA. For shore commands, the nominal risk-based red-line has been set at 75 percent of BA.[2] Red-lines are a management tool to track critical manning levels. However, the IA business rules state that red-lines do not restrict commands from being tasked to provide an IA if filling the billet will bring their manning below red-line levels.[3]

IA business rules exclude certain shore and sea duty billets from IA selection. The following shore duty billets are excluded: Type-6 overseas duty[4], joint duty, non-distributable manning (students, transients), nuclear weapons billets (security, maintenance), nuclear propulsion coded billets[5], and a portion of Manpower, Personnel, Training and Education (MPTE) readiness billets (critical instructor, recruit division commander, production recruiters, and production support billets). The following sea duty billets are excluded: Type 3 and 4 sea duty[6]; nuclear trained personnel assigned to CVN, SSN, SSBN, and SSGN class

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2 Harvey, J. C. (2008, January 6). GSA Detailing Business Rules. *NAVADMIN 003/08* .

3 Harvey, J. C. (2008, January 6). GSA Detailing Business Rules. *NAVADMIN 003/08*

4 Type 6 overseas shore duty is performed at overseas land-based activities that are credited as shore duty for rotational purposes.

5 Certain Nuclear propulsion billets are available for assignment with OPNAV N133 approval.

6 Type 3 and 4 sea duty is duty performed at overseas land activities that is credited as sea duty for rotational purposes.

warships; and Special Warfare (SPECWAR) assigned to United States Special Operations Command (USSOCOM).[7]

NAVAIR program cost, schedule, and performance risks are increasing as a result of reduced manning levels for project officers. For example, the Government Flight Test Director (GFTD) at Air Test and Evaluation Squadron Twenty One (HX-21) recently fulfilled an IA electronic warfare billet. This created a gap in both a test management position and the squadron's available test pilots when three major H-60 helicopter programs were concurrently involved in test. Ultimately, delay in Developmental or Operational test will prevent on-time delivery of critical aviation assets to operational squadrons, diminishing their war-fighting capability.

Two systems, the legacy IA Manpower Management (IAMM) process and the GWOT Support Assignments (GSA) process, currently operate in parallel to manage the Navy contingency manpower requirements. However, the system is in a state of transition:

> GSA detailing will capture approximately 73 percent of the current requirement by mid-to-late CY-2008. The goal is to shift the remaining 27 percent of requirements to the GSA detailing process as soon as practicable.[8]

The GSA process will attach en-route IA assignments onto Permanent Change of Station (PCS), or transfer, orders. This allows service members time to prepare for these assignments, and for the incumbent commands to prepare for the gap

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[7] Harvey, J. C. (2008, January 6). Individual Augmentation Manpower Management Business Rules. *NAVADMIN 002/08* .

[8] Harvey, J. C. (2008, January 6). Individual Augmentation Manpower Management Business Rules. *NAVADMIN 002/08* .

in their manning level. Although this new GSA process will not reduce the manning shortages created by an IA, it will help commands to better prepare for its impact. GSA detailing will allow Program Offices the ability to plan for project delays and manning reductions in advance, instead of dealing with them on short notice; what the "rip to fill" IA billets are currently causing them to do. The purpose of the shift is to significantly improve predictability of GSA for sailors and their families, enable volunteerism, improve manning stability at the unit level, and add detailer involvement for oversight of professional development and career progression. Fleet forces will continue to fill a portion of IA requirements through the IAMM process until GSA detailing is fully implemented. The goal is to create an environment in which GSA assignments are the standard, and the mid-tour IAMM assignments are the exception.[9]

The current "rip to fill" process for filling IA requirements within the Naval Test Wings is also governed by the internal NAVAIR Instruction 1001.2, which prioritizes NAVAIR military personnel for selection based upon the date the member checked out of his last operational command or the date of return from the last IA assignment since reporting to NAVAIR, whichever is more recent.[10] This instruction, combined with sporadic IA requests from the Bureau of Naval Personnel (BUPERS), has greatly affected a squadron's ability to plan testing and manage its manning levels.

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9 Harvey, J. C. (2008, January 6). Individual Augmentation Manpower Management Business Rules. *NAVADMIN 002/08* .

10 Venlet, D. J. (2007, August 22). Individual Augmentation Readiness Plan Instruction. *NAVAIR INST 1001.2 CH-1* .

Within the last few years, two main reviews have been conducted by NAVAIR to improve upon its process of selection. Although our research utilized such data from a large sample of squadrons within Naval Test Wing Atlantic, the focus was on the effects of using rotary-wing Test Pilots assigned to HX-21 to fill IA billets.

C. PROJECT OBJECTIVES

The primary objective of this research is to analyze the use of rotary-wing Test Pilots to fill IA billets. Secondary objectives are as follows:

1) To determine IA levels within Naval Test Wing Atlantic.

2) To incorporate a cost analysis completed by Naval Test Wing Atlantic, that analyzes the return on investment for a test pilot when he goes on an IA. This is to help answer the question of whether it is a financially sound decision to fill IA billets with Test Pilots. The cost analysis determines if NAVAIR recoups the cost to send pilots through USNTPS when they go on IA after they graduate.

3) To determine stakeholders' perception of whether the IA process can be managed more effectively within Naval Test Wing Atlantic.

4) To determine stakeholders' perception of IA's impact on their operations.

D. SCOPE

A ten-week study was conducted to investigate the ramifications of using NAVAIR Test Pilots to fill IAs. Our primary client was the Commanding Officer of Air Test and Evaluation Squadron One (VX-1). The purpose of this project was to determine if it makes sound financial sense to fill IA billets with Test Pilots currently serving in NAVAIR test squadrons. The data obtained from the

cooperation of various Developmental and Operational test squadrons is included to help analyze the effects of the IA program on the Naval Aviation test community, and in particular, HX-21. This project is not intended to determine the validity or to call into question the importance of the Individual Augmentation program in carrying out the priorities of the National Command Authority.

E. METHODOLOGY

General background data on IAs, including Office of the Chief of Naval Operations (OPNAV) instructions and messages, were collected from the Bureau of Naval Personnel (BUPERS) PERS-4G website, in order to understand the current management guidelines. Our consulting group attempted, without success, to interview a BUPERS representative for information. This, however, did not have a negative affect on our research. The current IA manning status within Naval Test Wing Atlantic was collected from the Wing Operations Officer to evaluate the most current manning situation. Other general background data was obtained from the Naval Test Pilot School to determine costs to train a test pilot and the length of its curriculum.

The next phase of data collection consisted of stakeholder interviews, which produced the most valuable information for this project. Although our baseline questions were similar, many were modified to capture data from the unique perspectives that came with each interviewee (Appendix A). Formal interviews were conducted primarily in person, using the telephone only due to geographical constraints. Two Test Squadron Commanding Officers, Naval Test

Wing Atlantic (NTWL) operations representatives, the NTWL Operations Officer, and the H-60 Program Manager (PMA-299) were interviewed. Three informal interviews were also conducted with Test Pilots at Naval Air Station Patuxent River, one of whom had recently returned from an IA assignment. Opinions and recommendations were gathered concerning the current and future affects of IAs on the Naval Aviation Test community.

II. RESULTS

A. IA STATUS WITHIN NAVAL TEST WING ATLANTIC (NTWL)

The current status of all IAs within NTWL is presented in Figure 1, taken from the NTWL IA Waiver Assignment Spreadsheet. This was updated in February 2008 and is currently tracked by the Test Wing's operations department. There are currently fifty-four individuals from the Wing deployed on IA billets, nine of whom are Test Pilots (Table 1). NTWL personnel have spent a total of 24,721 days deployed on IA since July 2005 (Table 2). The average IA length for officers is nine months, while the average length for enlisted personnel is ten months (Table 3). [11]

	Deployed		Pending		Alternates	
	Officer	Enlisted	Officer	Enlisted	Officer	Enlisted
TPS	1					
HX-21	2	2				
VX-20	4	2				1
VX-23	2	16	2			1
FRC		25				
NTWL Staff		1				
NTWL Total	9	45	2			2

Table 1. Current IA levels within the Wing

	Complete		Cancelled		Alt. Not Deployed	
	Officer	Enlisted	Officer	Enlisted	Officer	Enlisted
TPS	1				1	1
HX-21	3	1			2	1
VX-20	6	6	1	1	2	
VX-23	2	4	1	3	2	2
FRC		5		3		1
NTWL Staff	1					
NTWL Total	12	16	2	7	7	5

Table 2. Completed and Cancelled IA assignments

[11] Stevenson, NAVAIR Individual Augmentations Implementation Affects On Naval Test Wing Atlantic, 2006.

	Deployed Days		Complete Days		Total Days		Total Months		Ave. IA Length	
	Off	Enl	Off	Enl	Off	Enl	Off	Enl	Off	Enl
TPS			398		398		13		7	
HX-21	749	674	819	306	1568	980	51	32	10	11
VX-20	1190	540	1484	1980	2674	2520	88	83	9	10
VX-23	570	5453	430	662	1000	6115	33	200	8	10
FRC		8142		744		8886		291		10
NTWL Staff		365	215		215	365	7	12	7	12
NTWL Total	2509	15174	3346	3692	5855	18866	192	619	9	10

Table 3. Time on IA

Figure 1. Current IA Manning within NTWL (Source: NTWL, 2006)

Due to these IA assignments, manning levels within the majority of these test squadrons are hitting critical levels. Program test schedules and costs are at the mercy of this reduced manning; a backlog of testing could trickle down and affect the timeline of many different program schedules.

B. RETURN ON INVESTMENT

The throughput of USNTPS is thirty-six students per class, two classes per year, with each encompassing a ten-month course of both classroom and flight instruction. The cost to train an individual test pilot has been pre-determined at approximately $700,000.[12] Rigorous syllabus requirements, instructor and aircraft availability, as well as other external factors, limit the throughput to these two classes. This, in turn, limits the availability of new

[12] Stevenson, J. (2008, February). NTWL Operations Officer. (J. Baron and C. Conlon, Interviewers)

project officers for test squadrons. By using a combination of curriculum requirements with the Naval Aviation Readiness Integrated Improvement Process (NAVRIIP),[13] which tries to increase readiness while reducing costs, USNTPS has determined that its minimum instructor level is thirty. Instructors are split between the school's Fixed, Rotary, and System syllabi. Although students are currently exempt from IAs, the staff is not. A waiver has been submitted to NAVAIR to exempt staff members (Appendix B).

While in their payback tour following USNTPS, aircrews spend approximately five months assimilating into the test squadron. This normally encompasses required Fleet Replacement Squadron (FRS), proficiency, and specialty qualification training, as well as leave. When a test pilot is removed from this tour for a total of fourteen months on an IA, he is able to provide only a five-month return for his TPS training investment (based on a 24-month payback tour and five-month assimilation period). Returning test pilots interviewed stated that, in reality, this is reduced to only four productive months, since it typically takes an additional month to regain flight qualifications and proficiency, having been removed from a flying status for over a year.

This data is clearly depicted in Figure 2, a straight-line Return on Investment (ROI) analysis conducted by Naval Test Wing Atlantic in 2006 for a six- and twelve-month IA. The numbers are based on a $666,000 cost to train (in

[13] The Naval Aviation Readiness Integrated Improvement Program built upon AMSR recommendations and implemented a comprehensive program to fundamentally change the way the Navy provides manpower, equipment and training to stateside Naval Aviation commands.

2005) and a twenty-four-month payback period. After pre- and post-IA requisite training and leave, it was determined that a twelve-month IA produces 4.5 total productive months in the squadron. This results in a 34 percent ROI. A six-month IA produces 11.75 productive months in the squadron, resulting in a 57 percent ROI.[14]

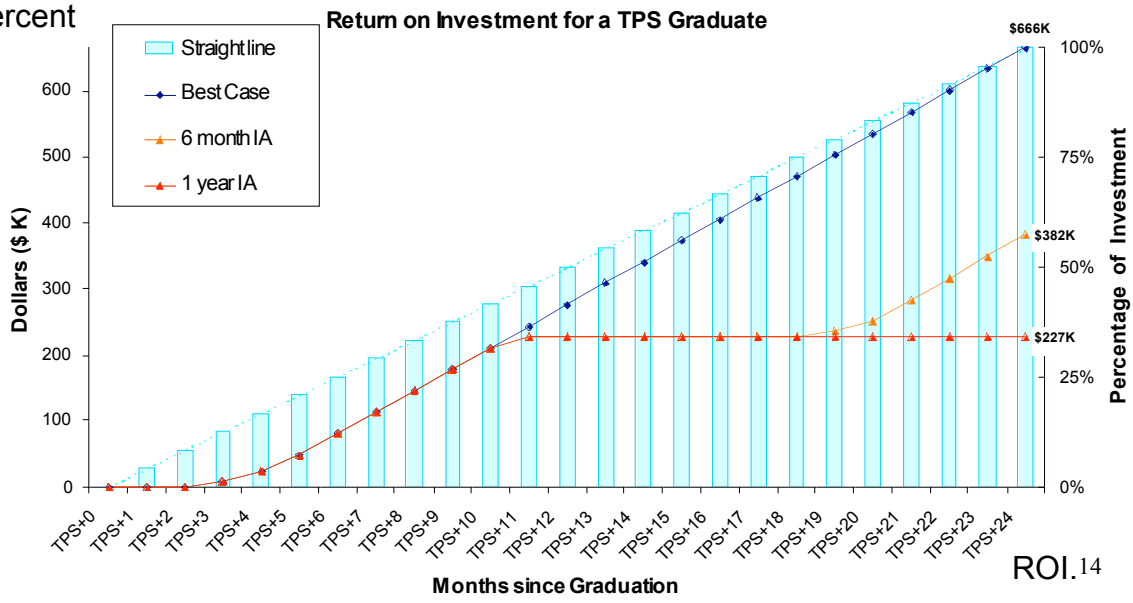

Figure 2. USNTPS Graduate Return on Investment (Source: NTWL, 2006)

[14] Stevenson, NAVAIR Individual Augmentations Implementation Affects On Naval Test Wing Atlantic, 2006.

C. MANAGEMENT OF THE IA PROCESS

Those interviewed expressed predominantly negative opinions about the IA management process. None interviewed refuted the reasons for an Individual Augmentation; however, each person agreed the management process within NAVAIR requires improvement. The waiver process was specifically highlighted as a problem.

Currently, nearly every command within both Naval Test Wing Atlantic and Pacific has a unit waiver submitted for its project officers (Appendicies B-G). Although Waivers receive endorsements from the Test Wing's chain of command, the NAVAIR Vice Commander determines priority of the waivers and gives ultimate approval. "The waiver process essentially puts program priority decision making into the hands of one person".[15] Colonel Brodfeuhrer, Commanding Officer of HX-21 maintained:

> If an IA billet comes into our squadron and a waiver is granted for a particular pilot one week, and another IA billet comes in next week, the next pilot on the list is the one going on the IA and is most likely not going to get a waiver granted. It does not matter if that person was more important to a program than the person who got the waiver. It's all just timing. It negates the utility of a waiver.[16]

Five out of eight of those interviewed felt there was some merit to Test Pilots being part of the IA exclusion list from the time they start USNTPS, until completion of their payback tour. All felt that the best time to fill an IA was after a Test Pilot completed his payback tour. Under the current NAVAIR instruction,

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15 NTWL Operations Representatives (2008, February). NTWL Operations Department. (J. Baron and C. Conlon, Interviewers)

16 Brodfeuhrer, C. (2008, February). HX-21 Commanding Officer. (C. Conlon, Interviewer)

when Test Pilots are fully qualified to start testing, they are at the highest point of visibility for an IA, as this coincides with the largest number of days removed from their last operational deploying command.

When asked how to improve the process, those interviewed wanted IA management handled at the BUPERS level, and to occur when a Test Pilot is up for orders at the end of his payback tour. This would switch the IA management burden to BUPERS and prevent payback tour interruption. The consensuses was that, until the GSA detailing process is fully online, the Test Wings should manage the billeting selection process, with Commanding Officer input, as opposed to NAVAIR executive level direction to the individual squadrons. "[If they] tell the Wing that they have to support 100 IAs next year, it is not good, but the Wing can at least plan for it, predict the impact, and report back those impacts."[17] Commander Stevenson, NTWL Operations Officer, stated, "I would like to see more control on the demand side. Allow the Wing to manage a stable number of IAs so we can plan."[18]

Captain Aitchenson, Commanding Officer of Air Test and Evaluation Squadron Nine (VX-9) states,

[17] Brodfeuhrer, C. (2008, February). HX-21 Commanding Officer. (C. Conlon, Interviewer)

[18] Stevenson, J. (2008, February). NTWL Operations Officer (J. Baron and C. Conlon, Interviewers)

> The current random process does not support any way of mitigating the risk of gapped billets. Powers that be said this is important, and I am supportive of it, but it makes things difficult [to plan for]. Impacts on OT [Operational Test and Evaluation], delays to programs, and tools important to the war-fighter get delayed.[19]

Although not manned with USNTPS graduate pilots, VX-9's operational test pilots are subject to IA billets as well, placing the squadron manning below red-line. Although operational testers are not subject to the same payback tour requirements as USNTPS graduates, and therefore ROI concerns, IA reduction of available operational testers will increase timetables for the completion of Operational Test and Evaluation.

D. IMPACT OF THE IA PROCESS

Interviews identified numerous effects that the IA process has had on the test community. An increase in project workload and decrease in test efficiency were common outcomes expressed. NTWL Operations department representatives believed,

> The results, the system test data, and the meaning of the system testing are still adequately being conducted; but test reporting is hurting. This causes a lack of efficiency, since without proper documentation, testing may be repeated, which lengthens test and increases cost. The library of previous results is hurting.[20]

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19 Aitchenson. (2008, February). VX-9 Commanding Officer. (N. Battaglia, Interviewer)

20 NTWL Operations Representatives. (2008, February). NTWL Operations Department. (J. Baron and C. Conlon, Interviewers)

The key to effective developmental testing is the project officer/engineer team. When this team forms early in the acquisition and testing process, and maintains a high degree of continuity, improved program results are recognized. When continuity is lost due to project officer IA billeting, team effectiveness diminishes.

Captain C. Peters, the overall Navy H-60 Program Officer (PMA-299), voiced concerns about the affects of the IA process at the program office level: "Life cycle costs may increase on some programs. Some programs are getting through test gates but overall quality may be in question. It can put more risk on the fleet's shoulders."[21] He went on to describe examples in current H-60 programs. The desired maturity level for the MH-60R/S Pre-Planned Product Improvement (P^3I) testing was set at 700 flight hours. According to Captain Peters, testing has not met half those hours due to Test Pilot manning reductions as a result of Individual Augmentations. This has caused schedule delays within both Integrated and Operational Evaluation Test periods, and certain helicopter systems of P^3I may not meet a Chief of Naval Operations (CNO) mandated program freeze deadline, diminishing the utility of these new helicopters to the fleet users.

Air Test and Evaluation Squadron Twenty One (HX-21) is the only rotary-wing squadron within the NAVAIR Test organization. There are four other fixed wing squadrons within NTWL alone. USNTPS graduates four times more fixed-wing than rotary-wing pilots per year. By comparison, HX-21 has the

[21] Peters, C. (2008, January). PMA-299 Program Manager. (J. Baron and C. Conlon, Interviewers)

majority of ACAT-I programs currently undergoing test within the wing. When an IA is filled from HX-21, it has a proportionally larger impact on the squadron in both manning and programs affected than a typical fixed-wing test squadron. As a former Commanding Officer of HX-21, Captain Peters pointed out that HX-21 is usually harder hit due to the infrastructure of the test community: "HX is already manned at critical levels and IAs reduce billets even more." [22]

HX-21 has submitted a unit IA waiver request to NAVAIR for all of its project officers (Appendix G). There are currently two officers and two enlisted personnel deployed on IA billets. All four are in Iraq and three of the four are attached to an Electronic Warfare battalion. A graphical representation of the IA affect on the squadron is presented in Figure 2. It is a Naval Aviation Readiness Integrated Improvement Program (NAVRIIP) metric chart for personnel manning at HX-21. It shows the Ready for Tasking (RFT) gap between entitlements for manning necessary to execute known program tasking and current/projected manning.[23]

[22] Peters, C. (2008, January). PMA-299 Program Manager. (J. Baron and C. Conlon, Interviewers)

[23] Stevenson, *NAVAIR Individual Augmentations Implementation Affects On Naval Test Wing Atlantic*, 2006.

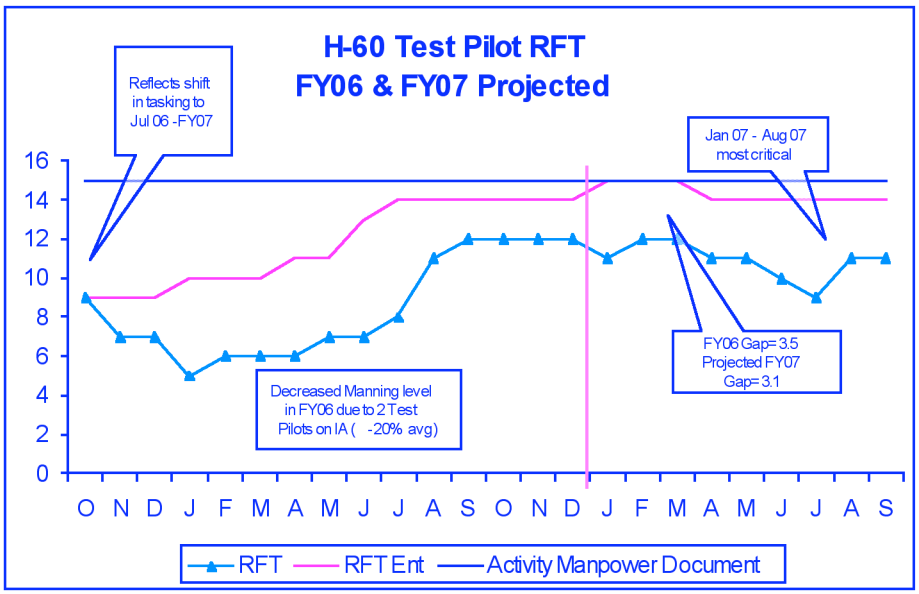

Figure 3. HX-21 Manning Versus Workload (Source: HX-21, 2006).

According to Colonel Brodfeuhrer, Commanding Officer of HX-21, the IA process can be summed up in one word: "Arbitrary." He states, " . . .safety is a concern because project officer workload is very high and with the GFTD [Government Flight Test Director] gone on IA, management foresight is lacking."[24] In order to mitigate risk, Colonel Brodfeuhrer called his management team together when told the GFTD was selected for an IA. The result of this meeting was a decision that HX-21 could not support two off-site test detachments at once.

Test program management is lacking at HX-21 as a result of the GFTD being on IA. A GFTD is apprised of all programs within the squadron. He is able to shift assets (pilots, aircrew, engineers, aircraft) from one program to another as program priorities change. Project officers, though aware of other competing

[24] Brodfeuhrer, C. (2008, February). HX-21 Commanding Officer. (C. Conlon, Interviewer)

programs under test in their squadron, normally do not have the foresight to effectively manage the interactions of these programs due to their focus on individual responsibilities.

The IA process within NAVAIR has had a negative effect on the naval aviation test and acquisition community. The reduced manning level in both operational and developmental test squadrons will continue to increase test program timelines and costs. Less than thorough testing endeavors, in order to maintain scheduling constraints, will place more risk and responsibility onto the Fleet, and could increase total life cycle costs of aviation programs. Safety is a paramount concern because workload levels are constant, or increasing, as manning is reduced. Finally, NAVAIR is not receiving the optimal return on its investment from USNTPS students when project officers are selected for Individual Augmentations during their payback tour.

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III. RECOMMENDATIONS

A. FORMALLY EXEMPT PROJECT OFFICERS

According to the IA business model, OPNAV has the ability to exempt certain billets. Naval Test Wing Atlantic should request formal exemption for United States Naval Test Pilot School graduates currently filling project officer billets during the pay-back tour.

B. INCREASE THE RED LINE FOR TEST SQUADRONS TO 90 PERCENT

The IA business model discusses variations in the red-line number between organizations. An increase from the current red-line to 90 percent of BA would reflect the importance of test team continuity for success.

C. MAKE INDIVIDUAL AUGEMENTATIONS MORE PREDICTABLE

Commanding Officers expressed a desire to have advanced notice of IA requirements. If commands were aware of their requirements in advance they could better manage their own manpower.

D. ASSIGN COMMANDS SPECIFIC AUGMENTATION BILLETS

Many commands have noted they continue to fill the same billets. If a formal long-term assignment were created, squadrons would be able to manage the planned rotational requirements with less impact on manning.

E. VOLUNTARILY EXEMPT PROJECT OFFICERS

NAVAIR could internally exempt project pilots. While this would necessitate the use of other military members throughout NAVAIR, it could compensate the manpower deficit with civilian contractors.

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INITIAL DISTRIBUTION LIST

1. Dr. Alice Crawford
   Naval Postgraduate School
   Monterey, California

2. Captain John Slaughter, USN
   Air Test and Evaluation Squadron One (VX-1)
   Patuxent River, MD

3. Colonel Brodfeuhrer, USMC
   Air Test and Evaluation Squadron Twenty One (HX-21)
   Patuxent River, MD